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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/810,040 | 03/26/2004 | Donald A. Ice | 15436.446.1 | 8454 |

22913 7590 08/17/2005

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EXAMINER

BEVERIDGE, RACHEL E

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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1725

DATE MAILED: 08/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/810,040

Applicant(s)

ICE, DONALD A.

Examiner

Rachel E. Beveridge

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: figure 3e. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informalities: page 9, paragraph [0027] and pages 9-10, paragraph [0028]. Paragraph [0027] refers to U.S. Patent Application titled "Lead Frame for Connecting Optical Sub-Assembly to Printed Circuit Board" without listing the application number. Paragraph [0029] refers to U.S. Patent Application titles "Methods of Manufacturing Lead Frame Connector for Connecting Optical Sub-Assembly to Printed Circuit Board" without listing the application number.

Appropriate correction is required. Please list the appropriate application numbers for each reference.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4 and 6-9 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Card et al. (U.S. 5,295,214). With respect to claim 1, Card discloses a “process for manufacturing the improved soldered joint between an optical sub-assembly and a flexible ribbon cable; and more generally between the leads of a component and an electrical interconnect structure,” (Column 3, lines 54-58) as seen in figure 1(100). Card also discloses there is a connection between the exposed terminals of the conductors on the optical sub-assembly and the electrical circuit (Column 4, lines 64-68).

With respect to claim 2, Card discloses that the leads in figure 1(104) are soldered within the holes in figure 1(106) (Column 4, lines 55-57 and column 9, lines 63-69). Regarding claim 3, Card’s disclosure of figure 1 and the positioning of “an electrical interconnection member within said housing and adjacent said first and second optical sub-assembly on the side of the sub-assemblies from which the leads extend, for electrical interconnection between elements of said optical module” (Column 10, lines 31-36).

With respect to claim 4, Card discloses the method in which the optical sub-assembly and the ribbon cable are positioned, and lists reflow soldering as a process to attain this configuration (Column 8, lines 14-21). Regarding claims 6 and 7, Card also disclosed "typically, one optical sub-assembly is a light transmitter for converting an electrical signal into an optical signal and the other is a light receiver for converting the optical signal into an electrical signal" (Column 1, lines 48-53). Column 5, lines 24-29 refers to a transmitter optical sub-assembly and column 4, lines 51-57 refer to a receiver optical sub-assembly.

With respect to claim 8, Card's discloses leads that are "integrally connected" to conductors that extend into a dielectric layer of the flexible cables (Column 4, lines 57-60). Card teaches a dielectric layer with which the leads are connected to and conductors extend from (Column 4, lines 57-60), as seen in figure 1. The general definition of a dielectric material is one that is non-conducting and is therefore considered insulating. With respect to claim 9, Card also discloses electrical contacts corresponding to the leads of the optical sub-assembly and conductors connected to a circuit (Column 3, lines 54-58 and Column 4, lines 64-68).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Card et al. as applied to claim 1 above, and further in view of Liu et al. (U.S. 2003/0026,081). Card does not disclose the hot bar process as the method for connecting the leads of the conductive structure to the printed circuit board. Liu teaches that the "protruding contact leads are suitable for hot bar reflow, which is where a heated bar is used to melt the contact leads such that they bond with an external surface" (Page 3, column 2, paragraph [0028], lines 10-13), as seen in figure 1 of Liu's application. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method disclosed by Card to utilize a hot bar process in order to provide an efficient method for connecting the leads of the conductive structure to a printed circuit board (see Liu, page 3, paragraph [0028], lines 10-13).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. 6,922,231 and U.S. 5,632,630.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rachel E. Beveridge whose telephone number is (571) 272-5169. The examiner can normally be reached on Monday through Friday, 8 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Dunn can be reached on (571) 571-1171. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

REB


JONATHAN JOHNSON
PRIMARY EXAMINER